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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 31

Application Number: 09/582,870

Filing Date: July 06, 2000

Appellant(s): SANO, OSAMU

Michael Cammarata
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed September 24, 2003.

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(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is substantially correct. The changes are as follows: The Final Rejection includes a rejection under 35 U.S.C. 102(e) over Inaguma. The Brief does not address this rejection. However, a certified translation of the foreign priority was filed on April 9, 2003. It is noted that this translation differs significantly from the instant specification. For example, the numbering of the drawings does not correspond, and various sections of the lengthy document have apparently been rearranged. Nevertheless, based on the certification attached to the translation, the examiner considers the instant specification to be fully supported by the foreign priority. If appellant disagrees with this determination, such

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should be indicated in response to this office action. In view of this, the rejection over Inaguma has been withdrawn, rendering this issue moot.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 29, 30, 34-38 and 39, 74-79, 80-84 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,645,107	Kobayashi	7-1997
8-104246	Yuuichi (JP)	4-1996

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 29, 30 and 34-38 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Yuuichi in view of Kobayashi.

In fig. 8, Yuuichi discloses a steering apparatus and control valve having the structure substantially as claimed. The device includes a valve body 33 and a valve spool 31. The valve spool 31 includes chamfers at 54 on the sections of the lands that are adjacent the pump supply 13/42. Each valve spool land has only one chamfer 54. Yuuichi also discloses chamfers on the

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valve body (i.e. on lands 38₂ and 38₈) and therefore, the chamfers are not on “only one of said valve body or said valve spool” as claimed. However, Kobayashi discloses a steering valve (figs. 4A and 4B) having chamfers 6 only on sections of the spool posts that are adjacent the pump supply (P). (i.e. Kobayashi discloses that it is only necessary to have chamfers on the sections of the spool posts that are adjacent to the pump supply, and is not necessary to have chamfers on the valve body.) It would have been obvious to modify Yuuichi, by eliminating the chamfers on the valve body for ease of manufacture since Kobayashi discloses that the chamfers are only necessary on the sections of the spool posts that are adjacent the pump supply to reduce noise (col. 4, line 6).

2. Claims 39 and 74-84 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over the combination Yuuichi and Kobayashi as applied to claims 29, 30 and 34-38 above, and further in view of Applicant's Admitted Prior Art (APA).

As set forth above, the combination teaches substantially all that is claimed. Presumably the pumps of Yuuichi and Kobayashi are driven by an electric motor (claim 39), but these references do not expressly disclose this. However, at page 1 of appellant's disclosure it is stated that the use of such an electric motor is known. It would have been obvious to use an electric motor to drive the pump since this is disclosed as being conventional and since electric motors are readily available and are commonly used for such purposes because of their efficiency.

The combination also does not teach that the flow rate is zero when steering is not carried out, and becomes high when steering is carried out. However, as shown in appellant's prior art fig. 4, the flow rate is low or zero when steering is not carried out, and becomes high when

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steering is carried out. Therefore, it would have been obvious to modify the combination by providing such flow rate for enhanced efficiency.

(11) Response to Argument

Initially it is noted that appellant discloses numerous embodiments having various arrangements of chamfers 7. Appellant's claims are drafted broad enough to read on multiple embodiments. Appellant's specification discloses that these chamfers reduce cavitation and the resulting noise (e.g. see page 17 of appellant's specification). A review of the prior art of record shows control valves having a myriad of arrangements of chamfers in order to control cavitation and noise. The relationship between the chamfers and cavitation/noise is well known in the prior art. For example, the applied reference of Kobayashi discusses this phenomenon in detail. See col. 4, lines 4-24.

Beginning at page 8, appellant argues that the references fail to teach all the claimed limitations. The examiner does not agree for the following reasons. As discussed in the rejection above, in fig. 8 Yuuichi discloses a steering apparatus and control valve having the structure substantially as claimed. The device includes a valve body 33 and a valve spool 31. The valve spool 31 includes chamfers at 54 on the sections of the lands that are adjacent the pump supply 13/42. Each valve spool land has only one chamfer 54. Yuuichi also discloses chamfers on the valve body (i.e. on lands 38₂ and 38₈) and therefore, the chamfers are not on "only one of said valve body or said valve spool" as claimed.

Regarding Kobayashi, appellant's remarks (brief pages 10 and 11) are directed to figs. 8A, 8B, 14A and 14B (of Kobayashi). It is noted, however, that the rejection specifically relies on prior art figs. 4A and 4B of Kobayashi, and not figs. 8 and 14. As discussed in the rejection

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above, Kobayashi discloses a steering valve (figs. 4A and 4B) having chamfers 6 only on sections of the spool posts that are adjacent the pump supply (P). (i.e. Kobayashi discloses that it is only necessary to have chamfers on the sections of the spool posts that are adjacent to the pump supply, and is not necessary to have chamfers on the valve body.) The examiner considers that it would have been obvious to modify Yuuichi, by eliminating the chamfers on the valve body for ease of manufacture since Kobayashi discloses that the chamfers are only necessary on the sections of the spool posts that are adjacent the pump supply to reduce noise (col. 4, line 6).

Appellant alleges (top of page 13) that under the examiner's reasoning, Kobayashi and Yuuichi could not be combined. The examiner does not agree because appellant's conclusion is based on reverse logic which is not necessarily accurate.

In response to appellant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the specific motivation to combine the teachings of Kobayashi with Yuuichi to eliminate the chamfers on the valve body is for ease of manufacture since Kobayashi discloses that the chamfers are only necessary on the sections of the spool posts that are adjacent the pump supply to reduce noise (col. 4, line 6). Eliminating the chamfers from the valve body 33 of Yuuichi (i.e. in fig. 8) would reduce the number of machining steps required. It is presumed that

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the forming of chamfers on the internal cylindrical surfaces of the valve body would be rather complex and difficult.

In response to appellant's argument that a successful combination of the teachings of Yuuichi and Kobayashi is unlikely (page 16), the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Appellant's remarks regarding the rejection of claims 39 and 74-84 are noted. The examiner considers that these remarks have been adequately addressed above in regard to claims 29, 30 and 34-38.


For the above reasons, it is believed that the rejections should be sustained.

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Respectfully submitted,


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Primary Examiner
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dgd

November 13, 2003

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